

C.1.1
to provide a smooth-film formed and film surface for printing and 2 to 90 % by weight of an ethylenically unsaturated compound selected from polyfunctional acrylates resulting from the esterification of a polyol with (meth)acrylic acid or polyallyl derivatives, whereby said surface layer does not contain an addition polymerization photoinitiator, comprising coating at least one side of the substrate with an aqueous dispersion comprising the water dispersable polymer and the ethylenically unsaturated compound and drying the coating.

Claim 12, line 4, delete "reasonably open".

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REMARKS

Favorable reconsideration is respectfully requested.

The claims are 1 to 15.

The above amendment is responsive to points set forth in the Official Action.

With regard to the objection to claim 4 in Official Action paragraph 2, the claim has been corrected in accordance with the Examiner's suggestion.

With regard to the rejections under 35 U.S.C. 112:

- a. The term "reasonably open" has been deleted as unnecessary in claims 1 and 12.
- b. The term "atoms" replaces "atom" in claim 4.
- c. With regard to the rejection to claim 6 as indefinite in the term "consisting essentially of", this term has been changed to "comprising" so as to be consistent with claim 1.
- d. Claim 9 has been rejected as indefinite and such indefiniteness has been overcome by incorporating the features of claim 1 into claim 9.

Claims 1 to 5 and 9 have been rejected under 35 U.S.C. 102(b) as anticipated by Mehta (U.S. 5,219,641).

This rejection is respectfully traversed.

A brief discussion of the present invention will be of assistance in appreciating Applicants' reasons for traversal of the rejection.

The films of the present invention are designed to improve adhesion between films and radiation cured inks. Hence it is important that the surface layer be free of photoinitiator and that the surface be receptive to such inks. Films of the present invention, when printed with radiation curable inks, create prints of improved hardness and water resistance.

The key features of the present invention are:

- the absence of photoinitiator in the film - which would otherwise make the film unuseable with radiation cured inks,
- the water dispersable polymer - which provides a smooth surface for printing and
- the ethylenically unsaturated compound (reaction product as described) - which acts both to plasticize the polymer and to cross-link with the ink when the ink is printed thereon and irradiated.

Mehta relates to the completely different field of substrates receptive to thermal transfer images where the printing ink is not affected by radiation. The coatings described in Mehta are radiation curable and therefore unuseable with radiation curable inks. These coatings comprise monomer or oligomer components which are polymerized *in situ* by radiation to form a polymeric coat. Mehta does not disclose or suggest water dispersable polymers but rather a coating containing polymer precursors (the monomers or oligomers) which only form a polymeric coat after radiation curing.

Thus, Mehta discloses a film where radiation is used to cure the coat and then ink is applied thereto by heating (thermal transfer), whereas in the present invention the (pre-cured) polymer surface layer is printed with ink and then the ink is hardened and fixed to the film by subsequent irradiation.

The water dispersable polymers used in the present invention are of high molecular weight and are essentially unreactive to further polymerization whereas oligomers of Mehta are of low molecular weight and will polymerize to form large polymers. This difference is evident to those skilled in the art.

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In view of the above significant differences between Mehta and the present invention, it is apparent that the present invention is neither disclosed nor suggested by Mehta.

The rejection of claims 6 to 8 and 10 to 15 over the above-discussed Mehta et al. (U.S. 5,219,641) in view of Kaburaki et al. (U.S. 5,047,286) is also respectfully traversed.

Kaburaki does not overcome the above-discussed deficiencies of Mehta.

As evident from the above discussion, Mehta relates to a very different type of film than Kaburaki which relates to sheets for printing with UV ink. A person concerned with thermal transfer receptive paper with an uncured coating thereon (to be radiation cured) such as Mehta would not likely consider and import any features from a document (such as Kaburaki) relating to substrates for radiation cured inks within an ink receptive polymer layer.

While the rejection states that it would be obvious to print the film of Mehta as taught by Kaburaki, this would go against the very basis of Mehta which relates to an improved substrate receptive to thermal transfer images and hence thermal transfer printing is an essential part of Mehta's disclosure.

For the foregoing reasons, it is apparent that the rejections on prior art are untenable and should be withdrawn.

No further issues remaining, allowance of this application is respectfully requested.

If the Examiner has any comments or proposals for expediting prosecution, please contact undersigned at the telephone number below.

Respectfully submitted,

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